

FOR DISCUSSION PURPOSES ONLY

NOT FOR ENTRY INTO WRITTEN RECORD

1. (Currently amended) A pattern measuring apparatus comprising:
a storage device to store a plurality of physical images of a pattern to be measured and predetermined edge reference data, the predetermined edge reference data comprising a plurality of pixels that have an intensity gradient, the images having been captured by an external imaging device at different focal distances;
an external imaging device to capture the physical images at different focal distances;
a processor to, for each of the physical images, (i) scan the physical image, using the predetermined edge reference data, to detect edge points of the physical image and (ii) compare the predetermined edge reference data to the intensity values of the physical image at the edge points to generate output a plurality of correlation values, each of the correlation values indicating that indicate correlations a correlation between the edge reference data and the intensity value of the physical image at a respective edge point points;
a calculator to, for each of the physical images, calculate a standardized correlation value based on the correlation values of the physical image, the standardized correlation value expressing that expresses a correlation between the predetermined edge reference data and the detected edge points of the physical image, based on the correlation values wherein each of the standardized correlation values corresponds to one of the physical images;
a determinator to, for each of the physical images, determine an in-focus state of the physical image, based on the standardized correlation value for the physical image;
an image selector to select one of the physical images from the plurality of physical images, the determined in-focus state of the selected physical image matching a preselected in-focus state; and
a measurer to process the selected physical image to measure the pattern.